

## CLAIMS

What is claimed is:

1           1.       A shopping system, comprising:  
2           a shopping cart including a plurality of wheels;  
3           a portable electronic device, coupled to the shopping cart, for displaying shopping data;  
4       and  
5           an energy generator, coupled to one of the plurality of wheels, for adding energy to a  
6       power source of the portable electronic device.

1           2.       A shopper tracking system, comprising:  
2           a shopping cart including a plurality of wheels;  
3           a portable electronic device, coupled to the shopping cart, for displaying shopping data;  
4       and  
5           a position mapping system, coupled to the portable electronic device, for developing a  
6       shopper location relative to a start location, the mapping system including  
7           a distance measuring system, coupled to one of the plurality of wheels; for providing a  
8       distance signal indicating a distance of movement of the shopping cart; and  
9           a direction measuring system for providing a direction signal concurrent with the  
10       distance signal.

1           3.       The shopper tracking system of claim 2 further comprising:  
2           a position locating system, coupled to the portable electronic device, for entering  
3       absolute coordinates of the start location.

1           4.       The shopper tracking system of claim 2 further comprising:  
2           a merchandise reader, coupled to the portable electronic device, for detecting  
3           merchandise identification data from a merchandise element proximate the portable electronic  
4           device; and  
5           a database, coupled to the portable electronic device, for storing absolute coordinate  
6           data for the merchandise element;  
7           the POS device using the absolute coordinate data of the merchandise element to adjust  
8           the shopper location.

1           5.       The shopper tracking system of claim 4 wherein the merchandise reader is a bar  
2           code scanner and the merchandize identification data is a UPC bar code.

1           6.       The shopper tracking system of claim 4 wherein the database is remotely  
2           located relative to the portable electronic device and the portable electronic device is coupled to  
3           the database using a wireless transmission system.

1           7.       The shopper tracking system of claim 4 wherein the database is written into a  
2           memory of the portable electronic device.

1           8.       The shopper tracking system of claim 2 further comprising:  
2           a merchandise reader, coupled to the portable electronic device, for detecting  
3           merchandise identification data from a merchandise element proximate the portable electronic

device; and

a database, coupled to the portable electronic device, for storing absolute coordinate data for the merchandise element;

the portable electronic device using the absolute coordinate data of the merchandise element to adjust the shopper location.

9. The shopper tracking system of claim 2 wherein the portable electronic device enters a reduced power consumption mode when the distance measuring signal indicates that the shopping cart has not moved at least a first threshold distance within a second threshold period.